

HIDDEN CREEK RANCH (PWSNO 1280249) SOURCE WATER ASSESSMENT REPORT

April 24, 2001



State of Idaho Department of Environmental Quality

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Source Water Assessment for Hidden Creek Ranch

Under the Federal Safe Drinking Water Act Amendments of 1996, all states are required by the U.S. Environmental Protection Agency (EPA) to assess every source of public drinking water for its relative sensitivity to contaminants regulated by the Act. The Idaho Department of Environmental Quality is completing the assessments for all Idaho public drinking water systems. The assessment for your particular drinking water source is based on a land use inventory within a 1,000-foot radius around your well, sensitivity factors associated with the well's construction and characteristics associated with either your aquifer or the watershed in which you live.

This report, *Source Water Assessment for Hidden Creek Ranch* describes the public drinking water source, the potential contaminant sites located within a 1000-foot boundary around the well, and the susceptibility (risk) that may be associated with any potential contaminants. This assessment, taken into account with local knowledge and concerns, should be used as a planning tool to develop and implement appropriate protection measures for this system. **The results should not be used as an absolute measure of risk and are not intended to undermine the confidence in your water system.**

Potential Contaminant Inventory. Hidden Creek Ranch is located on Blue Lake Road north east of Harrison, Idaho. Drinking water for the ranch is supplied by a 400-foot deep well near the main lodge. Potential contaminant sites documented inside the 1000-foot boundary around the well include septic system components; surface water and roads. The locations of barns and pasture relative to the well are not shown on available maps.

Hidden Creek Ranch tests quarterly for bacterial contaminants and yearly for nitrates. Samples were positive for Total Coliform bacteria in September 1993, January 1994 and July 1996. The 1993 incident was apparently related to construction work on the water system. The other positive samples were from isolated taps in the distribution system, not at the well itself. Nitrates have been at undetectable or very low concentrations since testing began in 1993.

The map on page 4 of this report shows the well location, the 1000-foot boundary around the well and approximate locations of potential contaminant sites inside the boundary. Table 1 summarizes additional information about the potential contaminant sites.

Table 1. Hidden Creek Ranch Potential Contaminant Inventory

Map ID	Site Description	Source of Information	Potential Contaminants
1-3	Septic System Components	PWS File/ Enhanced Inventory	IOC, Microbial
4	Surface Water	USGS Map	Microbial
5	Roads	USGS Map	SOC, VOC, IOC, Microbial

IOC = inorganic chemical, VOC = volatile organic chemical, SOC = synthetic organic chemical

Well Construction and Hydrogeologic Sensitivity. The Hidden Creek Ranch well was drilled in 1989 in a shale formation adjacent to the Blue Lake Creek flood plain. Soils in the 1000-foot zone around the well are generally classified as poorly to moderately well drained. First ground water was encountered at a depth of 360 feet. The well is cased for its entire depth with perforations from 300 to 400 feet. Static water level in the well is 155 feet below the surface. The surface seal depth is not mentioned on the well driller's report. The susceptibility analysis worksheet on page 5 of this report shows all the criteria used for scoring the well.

Susceptibility. The Hidden Creek Ranch well ranked moderately susceptible to microbial contamination and is at low risk for contamination with inorganic chemical compounds, volatile and synthetic organic compounds. The Susceptibility Analysis Worksheet shows formulas used to determine final scores for the well, and the susceptibility ranking categories.

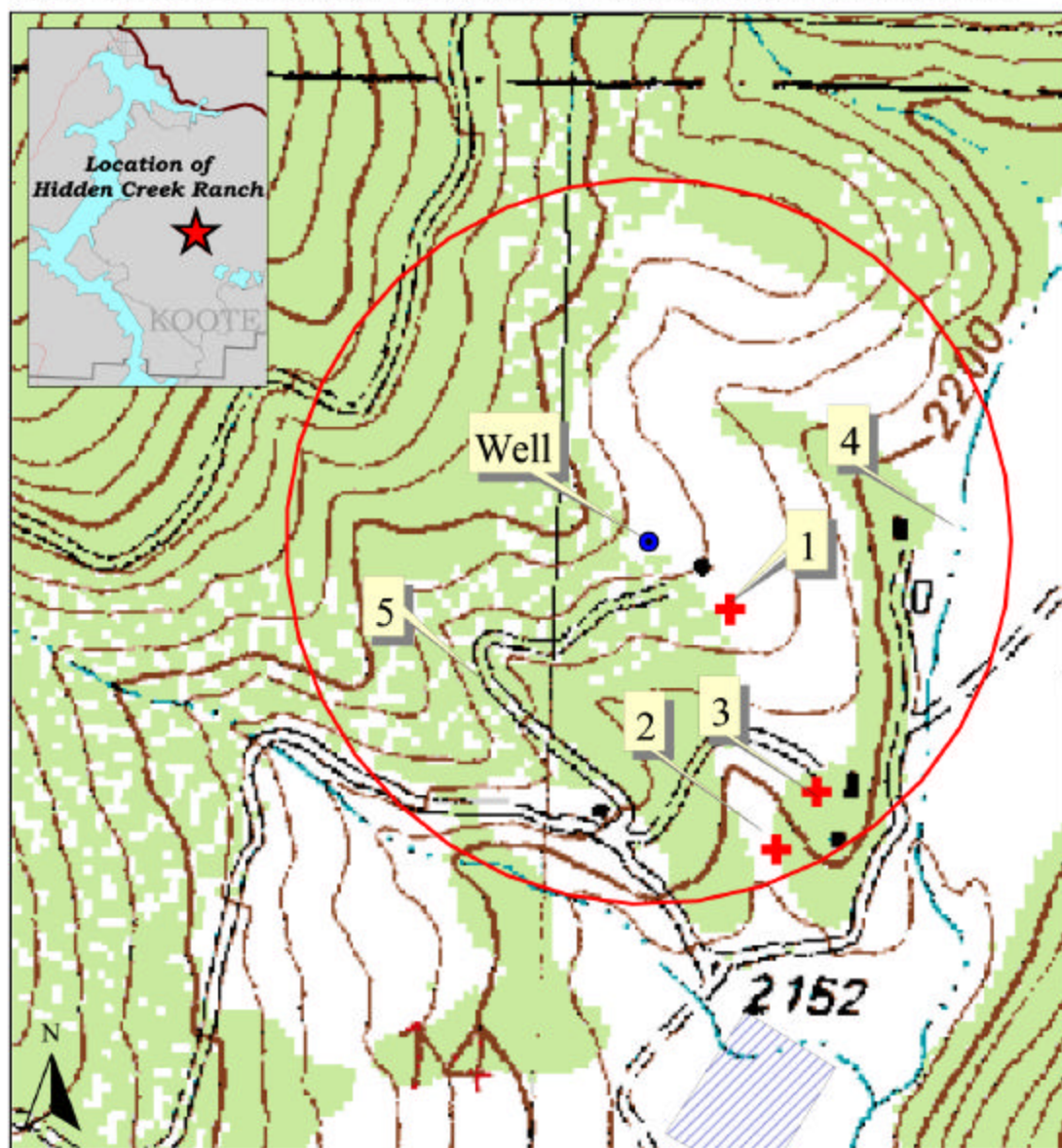
Protection Measures. This assessment should be used as a basis for determining appropriate new protection measures or re-evaluating existing protection efforts. No matter what ranking a source receives, protection is always important. Whether the source is currently located in a "pristine" area or an area with numerous industrial and/or agricultural land uses, the way to ensure good water quality in the future is to act now to protect valuable water supply resources.

Source water protection activities for Hidden Creek Ranch should focus first on the maintaining the sanitary setback zone around the well as an area where no petroleum products and no road or lawn maintenance chemicals are used or stored. It might be advisable to fence the well lot to prevent its use as a parking area and to keep livestock away from the wellhead. Back flow prevention is another important way to protect the well from surface contaminants entering the water supply through breaks in the distribution system.

Because of its fairly remote location, Hidden Creek Ranch needs to develop contingency plans and have the necessary equipment and supplies on hand for dealing with situations with the potential to affect ground water quality. For assistance in developing source water protection strategies please contact Tony Davis at the Coeur d'Alene Regional DEQ office at 208 769-1422.

DEQ website: <http://www.deq.state.id.us>

Figure 1. Hidden Creek Ranch. Delineation and Potential Contaminant Inventory.



0 500 1000 1500 2000 Feet

Legend

- | | | | |
|---|-----------------------|---|--------------------------|
|  | 1000-foot Buffer Zone |  | Septic System Components |
|  | Wellhead |  | Wastewater Land App.Site |



PWSNO 1280249
Well 1

Ground Water Susceptibility Analysis

Public Water System Name :

HIDDEN CREEK RANCH

WELL 1

Public Water System Number :

1280249

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1. System Construction		SCORE			
Drill Date	8/22/89				
Driller Log Available	YES				
Sanitary Survey (if yes, indicate date of last survey)	YES	1997			
Well meets IDWR construction standards	NO	1			
Wellhead and surface seal maintained	YES	0			
Casing and annular seal extend to low permeability unit	UNKNOWN	2			
Highest production 100 feet below static water level	YES	0			
Well located outside the 100 year flood plain	YES	0			
Total System Construction Score		3			
2. Hydrologic Sensitivity					
Soils are poorly to moderately drained	YES	0			
Vadose zone composed of gravel, fractured rock or unknown	NO	0			
Depth to first water > 300 feet	YES	0			
Aquitard present with > 50 feet cumulative thickness	YES	0			
Total Hydrologic Score		0			
3. Potential Contaminant / Land Use - SANITARY SETBACK		IOC	VOC	SOC	Microbial
		Score	Score	Score	Score
Land Use SANITARY SETBACK	GRASS/ UNPAVED DRIVE	1	1	1	1
Farm chemical use high	NO	0	0	0	
IOC, VOC, SOC, or Microbial sources in SANITARY SETBACK	NO	NO	NO	NO	NO
Total Potential Contaminant Source/Land Use Score - SANITARY SETBACK		1	1	1	1
Potential Contaminant / Land Use - 1000-FOOT BOUNDARY					
Contaminant sources present (Number of Sources)	YES	2	1	1	3
(Score = # Sources X 2) 8 Points Maximum		4	2	2	6
Sources of Class II or III leacheable contaminants or Microbials	YES	2	1	1	
4 Points Maximum		2	1	1	
1000-FOOT BOUNDARY contains or intercepts a Group 1 Area	NO	0	0	0	0
Land use 1000-FOOT BOUNDARY	Less Than 25% Agricultural Land	0	0	0	0
Total Potential Contaminant Source / Land Use Score - 1000-FOOT BOUNDARY		6	3	3	6
Cumulative Potential Contaminant / Land Use Score		7	4	4	7
4. Final Susceptibility Source Score		5	4	4	6
5. Final Well Ranking		Low	Low	Low	Moderate

The final scores for the susceptibility analysis were determined using the following formulas:

1) VOC/SOC/IOC Final Score = Hydrologic Sensitivity + System Construction + (Potential Contaminant/Land Use x 0.27)

2) Microbial Final Score = Hydrologic Sensitivity + System Construction + (Potential Contaminant/Land Use x 0.35)

Final Susceptibility Ranking:

0 - 5 Low Susceptibility

6 - 12 Moderate Susceptibility

> 13 High Susceptibility

POTENTIAL CONTAMINANT INVENTORY

LIST OF ACRONYMS AND DEFINITIONS

AST (Aboveground Storage Tanks) – Sites with aboveground storage tanks.

Business Mailing List – This list contains potential contaminant sites identified through a yellow pages database search of standard industry codes (SIC).

CERCLIS – This includes sites considered for listing under the **Comprehensive Environmental Response Compensation and Liability Act (CERCLA)**. CERCLA, more commonly known as **Superfund** is designed to clean up hazardous waste sites that are on the national priority list (NPL).

Cyanide Site – DEQ permitted and known historical sites/facilities using cyanide.

Dairy – Sites included in the primary contaminant source inventory represent those facilities regulated by Idaho State Department of Agriculture (ISDA) and may range from a few head to several thousand head of milking cows.

Deep Injection Well – Injection wells regulated under the Idaho Department of Water Resources generally for the disposal of stormwater runoff or agricultural field drainage.

Enhanced Inventory – Enhanced inventory locations are potential contaminant source sites added by the water system. These can include new sites not captured during the primary contaminant inventory, or corrected locations for sites not properly located during the primary contaminant inventory. Enhanced inventory sites can also include miscellaneous sites added by the Idaho Department of Environmental Quality (DEQ) during the primary contaminant inventory.

Floodplain – This is a coverage of the 100year floodplains.

Group 1 Sites – These are sites that show elevated levels of contaminants and are not within the priority one areas.

Inorganic Priority Area – Priority one areas where greater than 25% of the wells/springs show constituents higher than primary standards or other health standards.

Landfill – Areas of open and closed municipal and non-municipal landfills.

LUST (Leaking Underground Storage Tank) – Potential contaminant source sites associated with leaking underground storage tanks as regulated under RCRA.

Mines and Quarries – Mines and quarries permitted through the Idaho Department of Lands.)

Nitrate Priority Area – Area where greater than 25% of wells/springs show nitrate values above 5mg/l.

NPDES (National Pollutant Discharge Elimination System) – Sites with NPDES permits. The Clean Water Act requires that any discharge of a pollutant to waters of the United States from a point source must be authorized by an NPDES permit.

Organic Priority Areas – These are any areas where greater than 25 % of wells/springs show levels greater than 1% of the primary standard or other health standards.

Recharge Point – This includes active, proposed, and possible recharge sites on the Snake River Plain.

RICRIS – Site regulated under **Resource Conservation Recovery Act (RCRA)**. RCRA is commonly associated with the cradle to grave management approach for generation, storage, and disposal of hazardous wastes.

SARA Tier II (Superfund Amendments and Reauthorization Act Tier II Facilities) – These sites store certain types and amounts of hazardous materials and must be identified under the Community Right to Know Act.

Toxic Release Inventory (TRI) – The toxic release inventory list was developed as part of the Emergency Planning and Community Right to Know (Community Right to Know) Act passed in 1986. The Community Right to Know Act requires the reporting of any release of a chemical found on the TRI list.

UST (Underground Storage Tank) – Potential contaminant source sites associated with underground storage tanks regulated as regulated under RCRA.

Wastewater Land Applications Sites – These are areas where the land application of municipal or industrial wastewater is permitted by DEQ.

Wellheads – These are drinking water well locations regulated under the Safe Drinking Water Act. They are not treated as potential contaminant sources.

NOTE: Many of the potential contaminant sources were located using a geocoding program where mailing addresses are used to locate a facility. Field verification of potential contaminant sources is an important element of an enhanced inventory.

Where possible, a list of potential contaminant sites unable to be located with geocoding will be provided to water systems to determine if the potential contaminant sources are located within the source water assessment area.